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APPLYING 'MIXED METHODS' IN THE STUDY OF TOURIST BEHAVIOURS IN THE CITY – AN EXAMPLE OF CONCEPTUALIZATION AND APPLICATION (DISCURSIVE ARTICLE)

Abstract: This article fits into the category of a conceptual-discursive article. Its aim is to discuss the application of 'mixed methods' in research concerning tourist behaviours, especially in the city. The article consists of a part presenting a set of methods used to study such behaviours and a part discussing the results concerning the application of a proposed research procedure algorithm. The authors take a behavioural approach and propose using a quasi-experimental method combined with techniques of mobility monitoring (GPS), and the qualitative methods used in sociological research. The article presents a discussion concerning 'mixed methods', discusses a proposed algorithm of research procedure and presents conclusions following the joint application of these methods.

Key words: mixed methods, research into tourist behaviours, behavioural experiment, movement monitoring, GPS, focus group interview.

1. INTRODUCTION

Tourism-related research is not an easy academic endeavour. Due to its specificity it is multidimensional and methodologically difficult. Tourism as a field of research is expanding not only as regards its subject; but the variety of tourism types is increasing both spatially (due to the growing number of destinations) and temporally through the phases and cycles of preparation, the actual course of an activity, and its consequences. Such a wide area of study brings with it a question on the use of appropriate methods and suitable methodological approaches. From a different perspective, this last element is a spectacular mosaic of multidisciplinary and interdisciplinary exploration (MAIK, MARCINIAK & PALICH 2005, MARAK & WYRZYKOWSKI 2009, LISZEWSKI 2010). BOTTERILL & PLATENKAMP (2012) present a very broad spectrum of usable research methods which include both quantitative and qualitative approaches derived from ethnology, sociology, economics and psychology. Viewing tourism studies from a social perspective, the authors start by proposing an algorithm for selecting methods for three key aspects of research in tourism:

- study of a tourist's **experience** by analysing narration, conducting focus interviews, using methods of symbolic interactionism and Kelly's personal constructs;
- study of the site context, by analyzing case studies, contents, documents, conducting focus interviews;
- study of organization by using participatory action research, the Delphi method, evaluatory methods, as well as document and case study analysis.

Without going deeper into the appropriacy of these approaches, one conclusion can certainly be drawn from this multidisciplinary compilation: tourism studies have many different overtones. They are not easy, either as regards objectives, areas of investigation, or choice and knowledge of research methods. It must be added that the social perspective of combining research methods is not the only possible point of view, another is through geography and a spatial approach. The geographical aspect is represented in a very interesting way, especially from a Polish

research perspective (BUTOWSKI 2011). S. LISZEWSKI (2008) mentions the following research directions with regard to the city: analysis of tourism assets, tourism function, tourism space, as an area of tourism supply and demand, its inhabitants' free time, or the study of cityscape. The geographical (spatial) approach has resulted in the development of many quantitative methods of spatial analysis, including sociological surveys and environmental perception analysis.

In this article, we would like to consider a small part of 'tourism' studies, i.e. the analysis of tourist behaviours in a city. In this way, we want to draw the reader's attention to the behavioural aspect of studying tourism and tourists, and show at the same time the complementary application of various methods (LEE & JOH 2010, PETTERSON & ZILLINGER 2011, GREENBERG, RAANAN & SHOVAL 2014).

The general aim is to discuss the application of 'mixed methods' in tourism research, especially in the study of tourist behaviours in the city. It is a conceptual-methodological aim, although the article contains the results of empirical studies as well. The latter have been used as evidence for the proposed set of methods rather than empirical evidence. In the context of the main aim as set out here, it is possible to formulate individual aims which will be discussed in subsequent sections:

- defining the role of 'mixed methods' research in the study of tourist behaviours;
- presenting the algorithm for using the methods and discussing selected examples in the context of analyzing tourist behaviours in the city;
- presenting exemplar results and discussing the weaknesses and strengths of the applied methods.

2. WHAT IS 'MIXED METHODS' RESEARCH?

The postulate of a genuinely interdisciplinary character to research concerning tourism seems pivotal for the understanding of the mechanisms and rules existing in this domain of reality (MAIK & PRZYBECKA-MAIk 2005). Fulfilling this may guarantee a problem and conceptual integration of research activity. Due to an interdisciplinary approach, it is possible to provide increasingly detailed answers to research questions. However, as W. MAIK & M. PRZYBECKA-MAIK remark (2005), this interdisciplinary character can be misleading. Although it is declared by researchers, they often take a multidisciplinary approach where representatives of various academic disciplines look on a problem from different perspectives. It is often the case that there are no integrated conceptualizations or complementary creation of research tools and procedures. Only the approach to the objective itself is multidisciplinary, and there is no cooperation, not to mention an interdisciplinary character to the research procedure.

The most important aim of research is to discover truth and the mechanisms controlling the world around us. Hence, choosing an interdisciplinary approach in research seems a fairly natural consequence of setting out these objectives. An interdisciplinary approach lets us look at things from various, sometimes completely different research perspectives. The interdisciplinary character of the methods even makes it possible to conduct a study which is achieved thanks to various research methods at the stages of both data collection and interpretation. Taking an interdisciplinary approach makes it possible to study phenomena in more detail, which results in eliminating a researcher's 'subjective certainty' and coming closer to 'objective truth'. We must also remember about the 'load' of personal traits, conventions, geographical location, objectives and ideologies which are contributed by the researcher (a more comprehensive discussion of this issue can be found in Tribe 2006). Beyond any doubt, interdisciplinary cooperation concerning the identification of tourist behaviours in the city, needing understanding from geography, economics, psychology, cultural anthropology and sociology, supports the postulate formulated earlier – finding of the truth.

For many years, English-speaking researchers have been doing 'mixed method' research (MMR) (ROCHELEAU 1995, PHILIP 1998). It can be defined as using 'permeating' methodological approaches, two or three of which are applied concurrently (at the same stage, in the same study, at the same time, at the same place and on the same group of subjects) (MC KENDRICK 2009). English-writing authors point out that this approach is a kind of extension of the more popular multiple method, in which different research methods from various disciplines are applied at subsequent stages of study and not necessarily with the same group of subjects (JIANG 2003). In 'mixed method' research, specific methods, chosen by the researchers, are used simultaneously and in a 'permeating'/complementing manner (CRESWELL 2003).

3. 'MIXED METHOD' RESEARCH – AN ALGORITHM FOR APPLICATION IN THE STUDY OF TOURIST BEHAVIOURS

3.1. BEHAVIOURAL QUASI-EXPERIMENT

The first element of a 'mixed method' research algorithm which we propose is the experimental method. It is a kind of methodological security blanket

for the application of two other methods presented later (*cf.* Fig. 1).

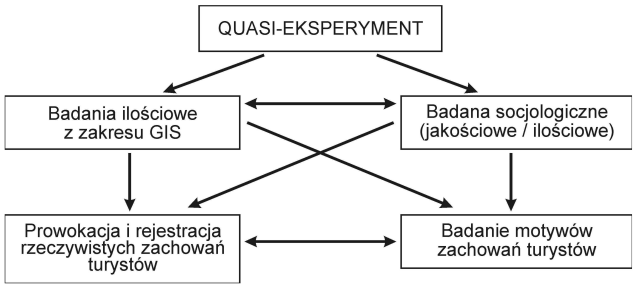

Fig. 1. A 'mixed method' research diagram for tourist behaviours in city space
Source: author based on H. JIANG (2003).

The experimental method, though popularly used in psychology (as broadly understood) in a variety of forms, is very rarely applied in other disciplines. We are naturally excluding here the wide range of sciences in which experiment is a well established, basic research method. The experimental method can be used in economic geography, although there the experiment gives way to simulation (MONTELLO & SUTTON 2006). However, the experimental (quasi-experimental) method is hardly ever used by social geographers, as well as in closely related disciplines, such as tourism. We can say 'hardly' however, because a milestone in applying psychological methods in the study of spatial behaviours was of course the pioneering work by American behavioural geographers, led by R. GOLLEDGE (GARLING & GOLLEDGE 1993), as well as many works inspired by the 'Californian school'.

It should be noticed that social research, especially the study of human behaviour, has become increasingly interdisciplinary. It is not only psychologists, cultural anthropologists or social scientists that pay attention to the 'mechanisms' controlling human behaviour. They have been joined by architects, urban planners, social geographers and those involved with geo-information. The last decade has brought the rapid development of the spatial economy and spatial planning, as well as tourism, in Poland. Although some aspects of tourism activity can be examined by means of sociological methods, tourist behaviours often require other tools. When asked about their own behaviour, respondents often provide inaccurate, declarative and normative answers. From the social perspective, the problems of 'tourism research' are serious. K. PODEMSKI & J. ISAŃSKI (2008) enumerates the following: the choice of respondents, lack of information about the number of new arrivals, tourist movements, the research location, language barriers in the study of foreign tourists, tourist interest in the research, and seasonality. Hence, an experimental approach appears to be highly interesting. At least some of the problems above disappear: the accessibility of tourists, convincing them to take part in the survey, their availability at the site, seasonality and language barriers. These elements can be controlled during an experiment. A behavioural experiment in tourism seems to be an optimal solution. However, it must be clearly stated that its full and restrictive version is difficult to apply in the study of tourists due both to the repeatability requirement and the controllability of the conditions, as well as (which is very important) the ethical aspect (PRINCE, BROWN & HEATHCOTE 2012, DZIAK, NAHUK-SHANI & COLLINS 2012). It might even be said to become a very risky and dangerous activity for the respondents (AMEDEO, GOLLEDGE & STIMSON 2009, p. 117), especially when it is conducted by those who lack the professional knowledge or interpersonal skills required in this type of research. Thus, in order to identify tourist behaviours in the city, the quasi-experiment method was used (THYER 2012). It is less restrictive in application due to the fact that a control group and a 'pretext' are excluded from it. In a quasi-experiment, the stability of dependent conditions, which cannot be controlled by the researcher, is less restrictive.

The application of the experimental (quasi-experimental) method diminishes one of the basic dilemmas of spatial social research concerning tourists – the huge difficulty in or even impossibility of grasping the dynamics of tourist behaviours, or even reaching respondents. In the latest literature on the subject, regarding the study of movement paths by means of GPS location, individual works can be found which refer to the mechanism of methodological triangulation and take the quasi-experiment into consideration, despite the fact that the authors themselves do not use these terms in their description of research methods (GREENBERG, RAANAN & SHOVAL 2014).

A quasi-behavioural experiment involves tools recording the respondents' movement in space and time, as well as setting tasks: taking the tourist into an unfamiliar city in order to examine behavioural aspects of activity, or their activity on tourism trails in a national park. It is important for the tourists (experiment participants) to be exposed to selected stimuli controlled by the researchers. It is possible to control the following social variables:

- the number of people or groups to be included;
- the compodition of the studied groups;
- individual socio-demographic profiles.

Independent variables may of course include time and the type of space: closing a part of the tourism trail, designating alternative paths/trails, different accommodation. Using the behavioural quasi-experiment method for the study of tourist behaviours allows repeatability of recording when the stimuli are

changed. Finally, in conducting a behavioural quasi-experiment, we have control over the respondents and access to them, which is very important when studying tourist behaviours. In traditional studies, they are often simply inaccessible.

3.2. RESEARCH INTO MOVEMENT PATHS

There are few technologies which have had such a significant and permanent influence on the methodology of research into spatial phenomena as the use of satellite location methods (GPS). In the early stages, GPS technology was used to track and analyse the paths of vehicles in studies of road traffic (ZITO, D'ESTE & TAYLOR 1995, QUIROGA & BULLOOCK 1998). The idea of introducing GPS technology into the study of individual human spatial behaviour probably appeared at the same time as a result of imperfect methods of recording the movements of pedestrians. The most popular were time-space budgets and diaries which made it possible to record the respondents' activity within a short time interval (ANDERSON 1971, THORNTON, WILLIAMS & SHAW 1997). The pioneer of GPS-based research was R.G. Golledge who, with the help of his co-workers, was the first to undertake research in which city pedestrian paths were recorded in order to discover certain regularities (KLATZKY, LOOMIS & TIETZ 1998). Currently, the use of GPS technology in the study of tourist behaviours, both in and outside the city, is gaining in popularity. The method has been applied by N. SHOVAL & M. ISAACSON (2007, 2010), J. XIA, P. ARROWSMITH, D. JACKSON & W. CARTWRIGHT (2008) and J. XIA, P. ZEEPHONGSEKUL & D. PACKER (2011). A serious drawback of using geo-information methods for the analysis of social behaviour is their purely recording character. They make it possible to obtain a precise record of a sequence of behaviour, but not to identify its motivation. Recently, attempts have been made to improve this by introducing a requirement to fill out different kinds of questionnaires and creating perception maps (PETTERSON & ZILLINEGER 2011, GREENBERG, RAANAN & SHOVAL 2014).

Even though it is a promising direction of development, considering analysis of social phenomena, they are not advanced but very basic methods. They record movement without providing information about motivation for an activity undertaken in time and space. In social sciences, including human geography, it is possible to find qualitative methods which are more profound and meticulous in analyzing motivations. This is why the potential of GPS triangulation with qualitative methods seems significant. However, using it to the full is possible only if advanced techniques of measuring movement paths are accompanied by equally advanced techniques supporting the interpretation of human spatial behaviours. Another necessary condition is a fully interdisciplinary application, assuming that the time, place, group of respondents, problem and research stage are the same.

3.3. QUALITATIVE SOCIOLOGICAL RESEARCH

The third component of the 'mixed method' research algorithm is qualitative sociological research, discussed last in this article, but as significant as the others. Researchers commonly believe that qualitative sociological methods (e.g. an in-depth interview) are simple research methods, easy to use and obvious in the interpretation of results. Unfortunately, due to such an attitude, qualitative studies lose their value as reliable research methods. It must be strongly stressed that qualitative methods, despite being subjective 'soft' research practices, have their own methodology of tool building and procedure. Without following a procedure, an in-depth interview becomes an ordinary social conversation, and without following a procedure, it cannot even be regarded as such a conversation. It is rarely heard that qualitative research methods are internally diversified and it is a methodological mistake to apply them in an equivalent and interchangeable way. Using each of the techniques may have different purposes: recognizing deeply rooted individual views, examining the views of a collective, resulting from the interaction of the respondents during research, recognizing ideas and stereotypes, the effects of the presence of third parties on the opinions of the respondents, etc.

The literature review shows how intensive the search for suitable sociological methods, complementing behaviour recording with the use of GPS is. It concerns methods which would allow us to make sense of recorded behavioural paths, uncovering their motivations and causes. At present, many researchers interested in behavioural research (including tourist) turn to relatively innovative techniques of conducting an interview during the respondents' trips. The methods called 'walking interviews' include both recording the respondents' comments while they are visiting the city (and at the same time recording paths), and a technique in which the researcher follows the respondent or travels with him/her, and pausing their tourism activity with a conversation-interview at key places (WYLIE 2005, MOLES 2008, EVANS & JONES 2011). Refraining from comments concerning the many advantages and disadvantages of 'walking interviews' (due to the editor's restrictions on space), we may just point out their one major weakness, i.e. lack of naturalness. Which reader

(including the authors), visiting the city or walking along a tourism trail, speaks to themselves about what they perceive, and why and how it happens, or shares their reflections with other people? The perception process itself is so complex that many impressions (it is not known how many and which ones) appear unconsciously after some time, as a part of reflection, from a distance. Distance causes secondary interpretation of the stimuli experienced. Therefore, in the case of interviews that were conducted much earlier than the actual recording it is possible that the impressions and motivations are distorted. However, the authors of this article believe that if a respondent talks about their impressions and motivations some time after the activity, it is much more natural (without pressure, stimulation, provocation) than while it lasts. We may also witness the 'effect of a good subject', who (having the researcher next to or right behind them) will want to visit, see the city or take a given route to satisfy the imaginary 'expectations' of the researcher.

In the presented algorithm, we propose using the focus group interview (FGI) or individual in-depth interview (KITZINGER 1995, LONGHURST 2003, KRUEGER & CASEY 2008), conducted slightly later than the recording of the paths, which will enable the participants of the first phase of the experiment ('sightseeing') to take a deep breath, i.e. gain some distance and take a stance on the visited sites.

The FGI is applied in order to recognize collective (perhaps even conformist – in extreme cases we are dealing with group thinking syndrome) social views. During a meeting in one room and an exchange of ideas, hidden conformism and collective views are crystallized. The confrontation of all participants' views and observations enables them to articulate their emotions, attitudes and opinions about a given issue. In contrast to this method, the individual interview is focused on searching for individual opinions, motivations, attitudes and references. The specificity of IDI allows a more or less standardized conversation with the subject in a face-to-face situation, i.e. a more intimate interaction.

4. THE RESULT OF USING THE PROCEDURE ALGORITHM

4.1. QUASI-EXPERIMENT CONDITIONS

The study took place in the summer (July-August) 2013 in Trójmiasto and was the first in a series. The independent variable of the quasi-experiment was the size of the groups sent to Trójmiasto. In total, the following were sent separately: one person aged 31, a young married couple, a group of three – grandparents with a 12 year old granddaughter and a group of student friends. Each adult participant of the experiment had their own GPS receiver recording their movement. The subjects' task was to move around Trójmiasto in any way they chose, though they could also make short, one-day trips outside. Before they left, they pointed to the place where they wanted to spend the night. Each of them had a sum of 500 zloty which they could spend on accommodation or partly use during the stay. Movement was measured with GPS HOLUX 1000C.

One month after sending the last person/group to Trójmiasto, a focus group interview more than two hours long was conducted with all the adult participants of the quasi-experiment. It is important that although the study did not bear the signs, at every stage the ethical rules of the research were strictly observed. The subjects were well informed about the aims of the study, the method of measurement and the possibility of withdrawing at any time without any consequence. The FGI material was recorded on camera and a dictaphone voice recorder. After preparing a coded transcript from the group interview, the primary materials were destroyed. The FGI itself comprised various study techniques: from interview-discussion through projection techniques to creating a mind map of the visited city.

4.2. PRESENTATION OF RESULTS

During the focus group interview, the experiment participants discussed topics related to the trip and impressions from their visit to Trójmiasto as well as their attitudes to tourism and perception of tourism attractions in Poland and globally. The conclusions presented below are based on the transcript of the discussion and contain only observations concerning the spatial behaviours of the respondents.

The first thing that could be noticed in the course of the discussion was the fact that Trójmiasto was perceived from the perspective of Gdańsk as the central, most important and most attractive city. When asked about their impressions from the stay, the subjects usually referred to Gdańsk, e.g.:

> **The single person (male)**: Gdańsk – very lively and pleasant. He really likes cities by water and seeing the harbour, ships. This is the best for me. Combined with old buildings in the city and some cafes. The first impression – incredible.

Sopot and Gdynia appeared in the discussion as less attractive places, which were 'not worth the time':

> **Couple** (**male**): (…) Gdynia, I'd been there once in transit, so I knew what to expect there. There isn't too much to see. So we decided to find something more interesting to do in Gdańsk.

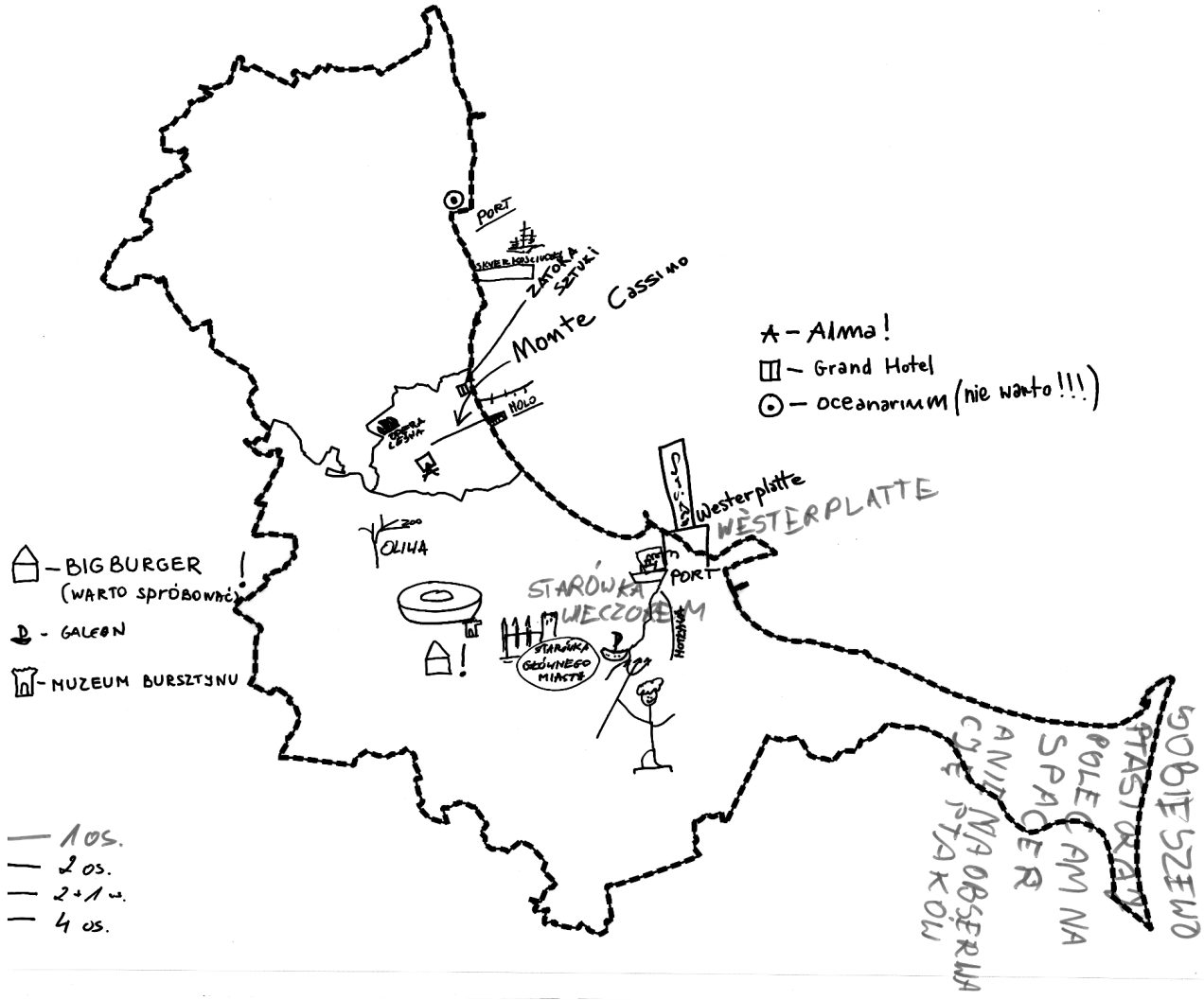

Fig. 2. The map of the most interesting places in Trójmiasto by FGI participants
The map key corresponds to the following identifiers used in the text:
1 person = a single person; 2 persons = a couple, 2+1 = a group of three with a child; 4 persons = groups A and B
Source: authors

> **Group of three with a child (female)**: (…) we skipped Sopot. I decided that it's no use going there. (…) we didn't want to waste time because we wanted to go back to Gdańsk.

An exception was the group of students, who chose Sopot as the most attractive place, due to different priorities as regards spending free time:

> **Group (female)**: There (in Sopot), we spent the most time. The greatest attraction was that we could live together for those five days. Without parents.

As for the choice of accommodation, some of the experiment participants based their choice mainly on price:

> **Group (male)**: At first, we were looking for a hostel, but it turned out that they were very expensive. We looked for something cheaper.

However, an equally important factor of the accommodation was accessibility by transport and close proximity to the main attractions:

> **Single person (male)**: I mainly focused on location. I wanted it to be close to the Old Town.

> **Group of three with a child (female)**: Transport was good, close to Wrzeszcz Railway Station. It was also quite close to tram stops; one or two lines.

Regardless of which city was chosen as the main destination, the remaining were visited only during individual short trips, often to a specific site.

> **Couple (male)**: We treated Sopot as a seaside resort; therefore we went there for one day to see it and have it over and done with.

> **Group of three with a child (female)**: We went to Gdynia instead, because you can get on those ships

there. As a matter of fact, we went there only to get on those two ships.

Group (female): We had only two trip days. One to Gdańsk and one to Gdynia. (…) We only saw the Oceanarium and the ships there (Gdynia).

During discussion, the subjects stressed how easy it was to move around Gdańsk and that the city transport was friendly and well organized:

Group (female): I like tram transport more (…). Gdańsk cares about tourists.

Group of three with a child (female): (…) there is no problem with tickets in Gdańsk because you can buy them from the tram driver.

Most participants of the experiment had not been preparing for the trip in any particular way. Their sources of information were almost exclusively local tourist information points – at the hotel or in the city. The most frequently mentioned form was the tourist map.

Group (female): We went to tourist information points and received maps.

Only the couple without a child had a detailed itinerary based on previously collected information.

Couple (male): We tried to download information from the internet. We found a lot. I made some printouts. We used just 10-15%. Not enough time.

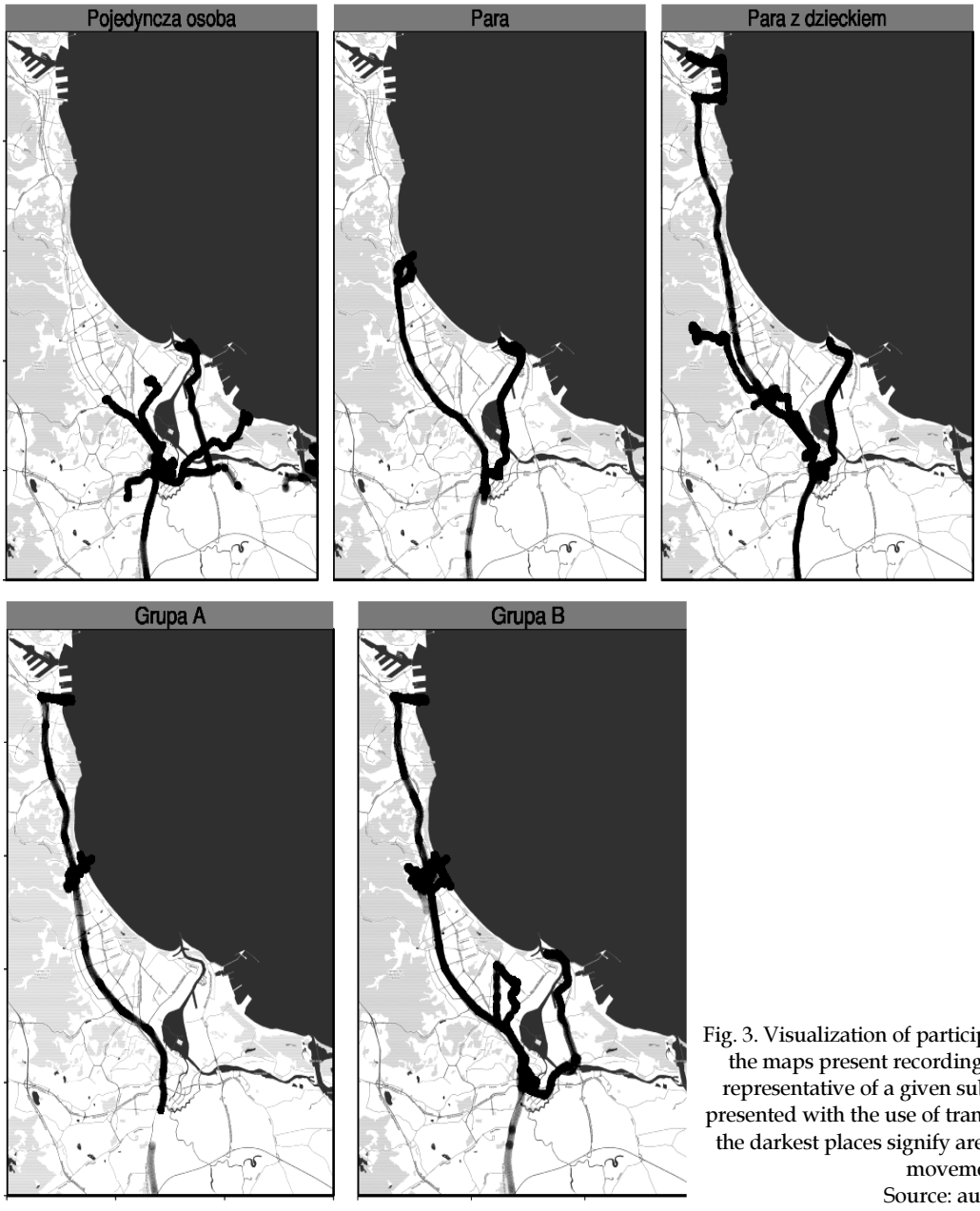

Fig. 3. Visualization of participants' movement paths – the maps present recordings from a single device representative of a given subgroup. The points are presented with the use of transparency alpha = 1/25 – the darkest places signify areas of the most frequent movement
Source: authors

The subjects also talked about the most attractive and recommendable places, as well as those which they had the worst memories of. The places worth recommending included St Dominic's Fair, the quay in Gdańsk, the Old Town in Gdańsk, the Fish Market, Mariacki Church with its view from the tower, the Museum of Amber, the Museum of Marine Culture in Gdańsk, the Shipyards, as well as Gdańsk Oliwa. Unpleasant memories were left only by the Anthropological Museum, Sobieszewska Island and in two cases the city of Gdynia as a whole. Due to the character of sightseeing described above, the respondents in both categories mentioned nearly exclusively places in Gdańsk. In addition, in this part of the group interview, the participants were asked to mark the places which they found most interesting on a map of Trójmiasto. In this way, the researchers obtained information about specific places as well their perception and remembered subjective locations in the form of a particular 'mind map' (cf. Fig. 2). It can be seen that the list of places is not simply a repetition of the names mentioned earlier. Some sites are not on the list, e.g. Mariacki Church, and instead there are new ones, sometimes described in detail, such as the *Galeon* or the Grand Hotel. It is interesting that respondents often comment on their attractiveness, e.g. put remarks like 'not worth visiting' next to the Oceanarium.

The movement paths recorded during the experiment may be analysed in aggregation or separately. Fig. 3 presents data for each group, where the largest one consisting of four, was additionally divided into two parts A and B, because its members got separated into two subgroups during the visit. The paths show both the range of tourism exploration and the most frequently visited places. In all the subgroups, except A and B, we can see the strong domination of the centre of Gdańsk as a place to spend free time – this is probably connected with the location of accommodation. Groups A and B were accommodated in Sopot and spent most of their time there, going on only one trip to Gdynia and in the case of Group B also to the centre of Gdańsk. Those staying in Gdańsk showed large differences in their movement patterns. The single person spent time mainly in the city centre, travelling to the attractions on the city outskirts, i.e. taking individual trips, not arranged in sequence. The only place visited by this person outside the city limits was Sobieszewska Island. Apart from Gdańsk, the couple visited Sopot, and their movement shows that it was strongly concentrated in the very small area of the Old Town. The couple with a child spent relatively the least time in the centre of Gdańsk, staying mostly in the south of the city and in urban greenery areas, such as the Oliwski Park. As the only group living in Gdańsk, they visited Gdynia as well.

Using the data obtained from all the participants, the most popular sites were identified, those where they spent the majority of their time (cf. Fig. 4). The procedure has been described more broadly in another publication (RZESZEWSKI & KOTUS 2014). It is not surprising that the most popular is Gdańsk centre, followed by the centre of Sopot and Gdańsk quay together with Westerplatte. The remaining attractions were visited only occasionally.

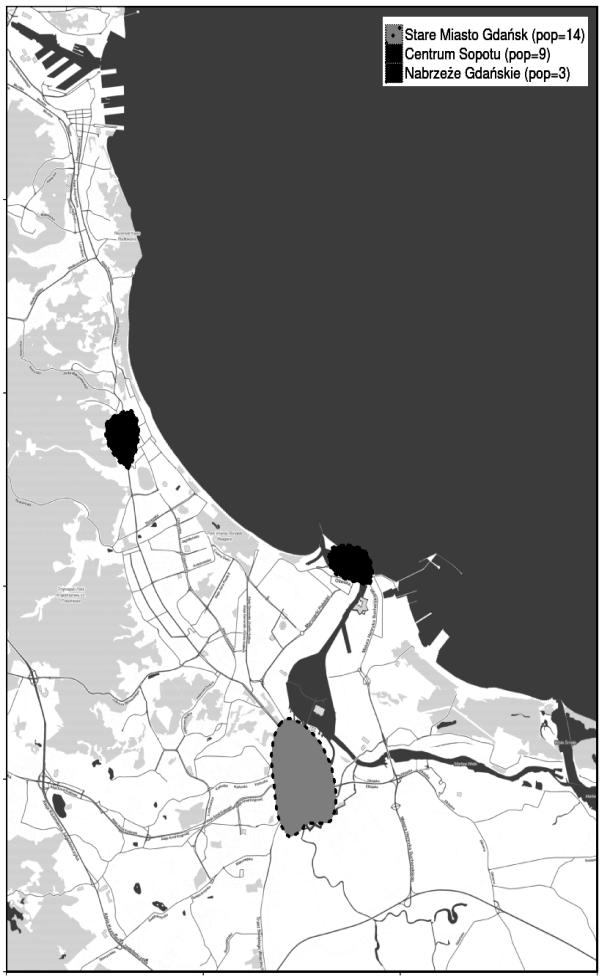

Fig. 4. The most popular places in Trójmiasto. The 'pop' parameter was established on the basis of the number of days when the experiment participants spent a considerable amount of time at a given place – the maximum value equals the sum of days spent in Trójmiasto by all groups (22)
Source: authors

Together the presented methods make it possible to obtain valuable information about tourist behaviours. However, only in their combination do the relationships which could remain unnoticed if interpreted separately show up. The group of students split during the experiment into two subgroups, which is visible in the movement record. The FGI makes it possible to interpret this behaviour – they were divided by sex, and men were less willing to do

the sightseeing, explaining that they were tired. The 'group of three with a child' consisted of grandparents with a granddaughter, for whom Sopot was not attractive in any way, but they decided to visit Gdynia so that their granddaughter could see the ships. For them, less crowded places, such as the Oliwski Park, were more attractive. As regards the 'Couple', the visualization of movement revealed a picture which was difficult to interpret, where on the one hand the exploration area was very small (as for the 'Group'), on the other – they did not spend time at one place. During the group interview it became obvious that they were the only ones who had prepared a very detailed and demanding sightseeing plan, but realized only a small part of it, moving according to the sequence established earlier.

Similarly, the record of paths allows us to add to the conclusions drawn from the sociological method. The most and the least attractive places in the city, pointed out by the experiment participants were not necessarily actually visited during the experiment – we should always consider the possibility of a mistake or a distortion of the idea of space as time passes. The movement paths also made it possible to ascribe ranks to individual sites more objectively e.g. on the basis of the amount of the time spent (cf. Fig. 4). In addition, the information obtained during the group interview makes it possible to name the identified areas and ascribe appropriate functions to them. It is particularly important when satellite location methods are used, in which the error in measuring the position in an urban environment is considerable (MODSCHING, KRAMER & TEN HAGEN 2006). Without additional information, location data alone does not let us determine whether the place analysed is a tourism attraction, an urban greenery area offering recreation while sightseeing, or simply a transport node for the tourists.

5. SUMMARY

The primary aim of the article was discussion concerning the application of 'mixed methods' in research on tourist behaviours. We hope that this purpose has been achieved. From the study undertaken, the use of 'mixed methods' is in our opinion necessary to describe reality relatively fully and fulfill one of the basic postulates of academic work – reaching truth. As a result of 'mixed method' research, the interpretation of results becomes more multidimensional or, to put it metaphorically, 'spacious'. It particularly concerns such a methodologically difficult research subject as tourism. The strengths of 'mixed method' research include its multidimensional character. Recording movement paths allows us to see clearly the 'mechanics' of a tourist's activity, but does not reveal their motivations and psychological effects. Social research increases the interpretational possibilities of measurements made with recording devices, or even make it possible to make such interpretations in a credible way. On the other hand, real movement paths decrease subjectivity in interpretation of behaviours inevitably introduced by the researcher at the analysis stage, and make it possible to confront participants' ideas about space with their actual movements.

The disadvantages or dangers of 'mixed method' research include the risk of an unconscious study of something else by means of the various methods, missing the aim of the study or simply an unintentional use of the 'multiple method' (JIANG 2003). The use of GPS devices, group or individual interviews, projection methods (e.g. mind maps) should be coordinated in such a way that the techniques used offer real methodological triangulation and are oriented towards different views of the same phenomenon, with the same group of subjects participating. Using various techniques is *a priori* connected with activities done at a different time and place, by different researchers. Therefore, these factors may be very misleading. As a result, research should be conducted simultaneously, and not separately. Such research is usually undertaken by more than one person, as it requires a team of experts from different disciplines. This increases the risk of only partial research carried out simultaneously, and not complementarily.

During 'mixed method' research, we must remember that qualitative studies, though often called 'soft techniques', have their own procedures and application requirements. They cannot be used without these procedures because then they would lose strength as a reliable tool. Qualitative sociological studies (e.g. group interviews) are seemingly easy. As a matter of fact, they force the researcher to gain precise social knowledge and skill in making use of it. Without this they cannot be used.

It seems that currently tourism studies have new, promising prospects in which the application of 'mixed method' research will become an obligatory practice. Using methodological triangulation, as presented above, gives researchers a number of challenges. It is felt that the effort put into tackling them may bring effects which are unobtainable when a more traditional approach is taken. It can be hoped that this will create opportunities to build new, better models to describe tourist behaviours in space.

FOOTNOTE

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